

Diploma Thesis Assignment

Student: **Hemanth Manoharan**

Study Programme: N2649 Electrical Engineering

Study Branch: 2612T041 Control and Information Systems

Title: **Monitoring of the Daily Living Activities in Smart Home Care (SHC)
within IoT**
Monitorování denních aktivit obyvatel Smart Home Care v rámci IoT

The thesis language: English

Description:

Use the appropriate SW and HW tools to implement the selected method for monitoring of the daily living activities (ADL) in Smart Home Care (SHC) within IoT.

1. Perform research and analysis of the current state of the methods of monitoring of the daily living activities in Smart Home Care within IoT.
2. Describe the possibilities of KNX technology for SHC ADL monitoring within IoT.
3. Ensure that KNX is linked to the appropriate IoT technology to monitor SHC ADL.
4. Test the functionality and reliability of the implemented system in SHC ADL within IoT.
5. Using the created application, ensure real-time ADL monitoring of selected SHC spaces within IoT.
6. Evaluate and compare the results.

References:

- [1] MERZ, Hermann, Thomas HANSEMANN a Christof HÜBNER. *Building Automation: Communication systems with EIB/KNX, LON and BACnet*. Springer Science & Business Media, 2009. 282 p. ISBN 3540888292.
- [2] HARPER, Richard. *Inside the smart home*. New York: Springer, c2003, xi, 264 p. ISBN 1-85233-688-9.
- [3] CLEMENTS-CROOME, Derek. *Intelligent buildings: design, management and operation*. Reston, VA: ASCE Press, distributor, 2004, xiv, 408 p. ISBN 0-7277-3266-8.
- [4] CELENEC. *SmartHouse Code of Practice*. Brussels: CENELEC, © 2005 CENELEC. CWA 50487.
- [5] KNX. Company literature KNX. Available from: <http://knx.org/knx-en/index.php>.

Extent and terms of a thesis are specified in directions for its elaboration that are opened to the public on the web sites of the faculty.

Supervisor: **doc. Ing. Jan Vaňuš, Ph.D.**

Date of issue: 01.09.2020

Date of submission: 30.04.2021

prof. Ing. Jiří Koziorek, Ph.D.
Head of Department

prof. Ing. Pavel Brandštetter, CSc.
Dean